

Notice of Allowability

Application No.

10/631,045

Applicant(s)

ZIMMER ET AL.

Examiner

Art Unit

Ling-Siu Choi

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 02/07/2005.
2. ☒ The allowed claim(s) is/are 1,4-7,11-13 and 15-23.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 02/07/2005
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

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DETAILED ACTION

1. This Office Action is in response to the Amendment filed February 7, 2005. Claims 2-3, 8-10, and 14 were canceled and claims claim 17-23 have been added. Claims 1, 4-7, 11-13, and 15-23 are now pending.

Examiner's Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CAR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. John D. DeLong on June 10, 2005.

3. The application has been amended as follows:

Claim 1, line 4, change "less than 12 nanometers" to --less than 10 nanometers--;

Claim 7, lines 7-8, change "less than 12 nanometers" to --less than 10 nanometers--;

Claim 11, line 4, change "less than 12 nanometers" to --less than 10 nanometers--;

Claim 12, line 4, change "less than 12 nanometers" to --less than 10 nanometers--;

Claim 13, line 4, change "less than 12 nanometers" to --less than 10 nanometers--.

Allowable Subject Matter

4. Claims 1, 4-7, 11-13, and 15-23 are allowed.

5. The following is an examiner's statement of reasons for allowance:

The present claims are allowable over the closest references: Wang et al. (CN 1368518) and Chen (CN 1386788 A).

A tire comprising	
(a)	100 wt parts of at least one rubber containing olefinic unsaturation
(b)	1-250 phr of a filler
(c)	0.1-1.5 phr of zinc oxide particles having a diameter of less than 10 nanometers

(summary of claim 1)

Wang et al. disclose a rubber composition for the rubber pad under rail, comprising 100 part by weight, 1-5 parts by weight of promoter, 1-3 parts by weight of anti-ageing agent, 2-10 parts by weight of nanometer zinc oxide powder, 0.2-1.5 parts by weight of sulfurizing agent, 30-60 parts by weight of carbon black, 30-60 parts by weight of an inorganic filler, 0.5-10 parts by weight of tetra-acicular zinc oxide eshisker, and 0.2-5 parts by weight of coupling agent, wherein the rubber composition consists of natural rubber, styrene-butadiene rubber, and cis-1,4-polybutadiene rubber; nanometer zinc oxide has average **diameter of 20-40 μm** (abstract; page 2, line 15-16; page 3-Table 1). However, Wang et al. do not teach or fairly suggest a tire comprising 0.1-1.5 phr zinc oxide particles having a diameter **less than 10 nanometers**.

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Chen discloses a rubber composition comprising a rubber and 1-3 phr zinc oxide having a diameter of **10-80 nm** (abstract). However, Chen does not teach or fairly suggest a tire comprising zinc oxide having a diameter **less than 10 nanometers**. Furthermore, in view of the present specification (pages 7-8), the use of zinc oxide particles having a mean diameter of less than 10 nanometers with an additive (wax, fatty acid, a resin, an oil, or silica) in the rubber composition allows a considerable reduction of zinc oxide in the rubber composition without negative impact on the curing or vulcanization process. With such unexpected benefit, it is not obvious to use zinc oxide having the diameter less than 10 nanometers with other additive in the rubber composition for the tire preparation.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.

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L. S. Choi

**LING-SUI CHOI
PRIMARY EXAMINER**

May 10, 2005